

Technical Solution Sheet 8.01

8: Backflow Prevention (Medium & high risk only)

Backflow Requirements for Hydronic Heating Installations

AIM

The aim of this technical solution is to clarify some of the plumbing issues associated with backflow prevention when connecting a drinking water supply to a new hydronic heating system.

PLUMBING REGULATIONS 2008

The *Plumbing Code of Australia* (PCA) is adopted by and forms part of the *Plumbing Regulations 2008*. Part B of the PCA specifies the objectives and performance requirements related to the installation of water services. *AS/NZS 3500.1: Plumbing and drainage Part 1: Water Services* and *AS/NZS 3500.4: Plumbing and drainage Part 4: Heated water services* are “deemed to satisfy” documents listed in Part B of the PCA and contain sections on cross connection control and backflow prevention.

TYPES OF HYDRONIC HEATING SYSTEMS OPEN OR CLOSED EXPANSION HYDRONIC SYSTEM, LOW HAZARD

A low hazard open or closed expansion hydronic system is one which recirculates water that does not contain a rust inhibitor or similar chemicals. If the installation has corrosion resistant heating circuit piping and components, and does not require the addition of any chemicals, the hazard rating is low. This installation will require a non testable backflow prevention device such as a dual check valve or air gap.

OPEN OR CLOSED EXPANSION HYDRONIC SYSTEM, HIGH HAZARD

A high hazard open or closed expansion hydronic system is one which recirculates treated water. If the installation contains a rust inhibitor or similar corrosion resisting chemicals, the hazard rating in accordance with *AS/NZS 3500.1* is high.

This installation will require the water supply to be connected via a testable backflow prevention device such as registered air gap, break tank or reduced pressure zone device (RPZD).

COMBINED DHW (DOMESTIC HOT WATER) HYDRONIC SYSTEM

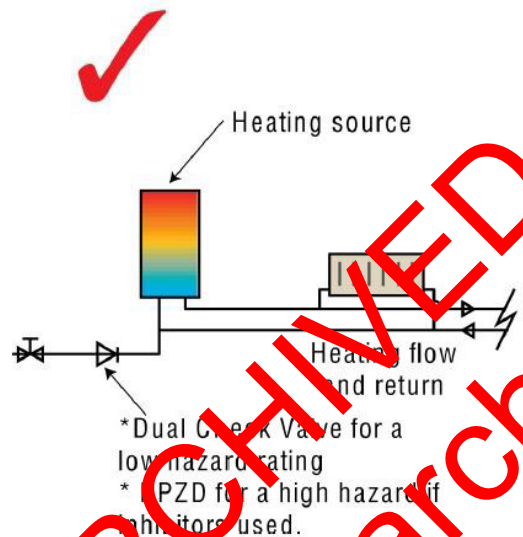
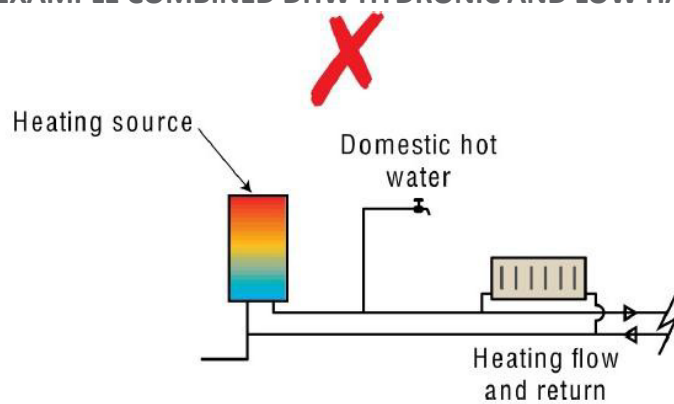
Some systems are available that recirculate domestic hot water through a hydronic heating system.

This is permitted provided that the domestic hot water is reheated above 60° C, and every component, including the water boiler / heater is approved and suitable for contact with cold and heated drinking water.

Heated water to sanitary fixtures used primarily for personal hygiene purposes (such as in bathrooms) must be reduced in temperature as outlined in *AS/NZS 3500.4* (see Figure 1 and 2)

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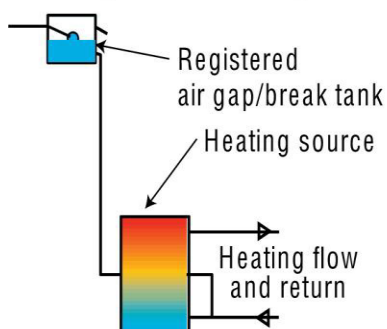
FIGURE 1 - EXAMPLE COMBINED DHW HYDRONIC AND LOW HAZARD SYSTEMS



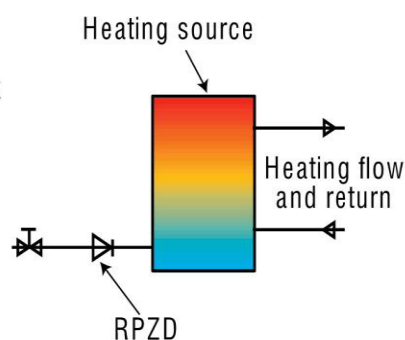
Important:
Water in this system must be reheated to above 60°C and every component must be approved for contact with cold and heated drinking water.

FIGURE 2 - EXAMPLE OPEN AND CLOSED EXPANSION HYDRONIC SYSTEMS

Open expansion system High Hazard Rating



Closed expansion system High Hazard Rating



Closed expansion system Low Hazard Rating

